



Transforming for Technical Excellence

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for Systems Integration

Leader Led Workshop
Goddard Space Flight Center
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Where We Are

- **9 months since National Policy and Direction No. 31 announcing Vision for U.S. Space Exploration**
- **4 months since release of report of President's Commission on Implementation of U.S. Space Exploration Policy**
- **3 months since NASA organization transformation**



Transformation of NASA

- **CAIB/Return to Flight Efforts** –Stafford-Covey independent review is progressing; May 2005 RTF planned
- **Renewed Commitment To Excellence (Diaz Report)** – Actions/Plans established and underway
- **Report of the President's Commission** – Responses to recommendations in progress
- **Clarity Team Report** – Recommendations largely incorporated into NASA Policy Directive 1000.3



Transformation of NASA

- **The space exploration vision requires an Agency organization that effectively manages the interdependencies and linkages between organizational units. It requires a strong emphasis on focusing, prioritizing, and integrating our activities to achieve our objectives.**



Transformation of NASA

- **NASA Headquarters Transformation**
 - **Streamlines organization, creates structure that affixes clear authority and accountability.**
 - **Increases synergy, improves integration in support of NASA Vision**
- **Highlights**
 - **From 7 Enterprises to 4 Mission Directorates**
 - **From 14 Functional Offices to 7 Mission Support Offices**
 - **Greater emphasis on strategic planning and investments**
 - **Chief Safety and Mission Assurance Officer reports directly to Administrator**



Selected New Roles and Responsibilities

- **NASA Strategic Planning Council**
 - Agency-level strategic decisions
- **NASA Operations Council**
 - Integrated Agency tactical and operational discussions and decisions
- **Director for Advanced Planning**
 - Facilitates the development of input, options, and assessments for Strategic Planning Council
 - Strategic and capability roadmaps (with Directorates)
 - New initiatives and studies of strategic issues (with Directorates)



Selected New Roles and Responsibilities (cont.)

- **Associate Deputy Administrator for Systems Integration**
 - Integrated program architecture and requirements flow-down
 - Tracking and assessing progress towards strategic goals and objectives
 - Agency level milestones and integrated critical paths
 - Directorate interdependencies
 - Integrated projection of Agency needs and capabilities -- in concert with implementation of associated management and/or strategic investment processes and decisions
- **Advanced Planning and Integration Office**
 - Supports both Advanced Planning & Systems Integration Activities



Initial Focus Areas for Advanced Planning & Systems Integration

- **Advanced Planning**
 - Strategic roadmap activities
 - Capability roadmap activities
 - Agency Level Requirements
- **Systems Integration**
 - Strategic Plan revision
 - Strategic Architecture
 - Program Integration: Program Management Committee Governance
 - Budget Integration: Corporate G&A zero-base review
 - Institutional Integration: NASA Core Competencies; Integrated Institutional Workload Analysis



Advanced Planning

- **Strategic Roadmap** – A coordinated and comprehensive longitudinal strategy, with key decision points identified, that provides a foundation for investment decisions and priorities.
- **Capability Roadmap** – A coordinated and comprehensive strategy that articulates technical and programmatic solutions for provision of a required major capability.



Advanced Planning: Strategic Roadmap Teams

<i>Roadmap</i>	<i>NASA HQ Chair</i>	<i>Center Chair</i>	<i>External Chair</i>
Robotic and human lunar expeditions	Craig Steidle/ Bill Readdy	Jefferson Howell	Tom Stafford
Robotic and human exploration of Mars	Al Diaz	Charles Elachi	Tom Young
Solar system exploration	Orlando Figueroa	Scott Hubbard	Jonathan Lunine
Extra-solar planets	Ghassem Asrar	Chas Beichman	Adam Burrows
Exploration transportation system	Craig Steidle	Jim Kennedy	Charles Boldin
Space station completion and utilization	Mark Uhran	Bob Cabana	Tom Betterton
Origin and evolution of the Universe	Anne Kinney	Nick White	Kathy Flanagan
Earth system dynamics	Orlando Figueroa	Diane Evans	Charlie Kennel
Sun-Earth system	Al Diaz	Franco Einaudi	Tim Killeen
Transforming aeronautics	Terry Hertz	N/A	Jim Jamieson
Education and expansion of national science and technology capabilities	Adena Loston	Julian Earls	Sally Ride (TBC)
Application of nuclear systems	Craig Steidle	Chris Scolese	John Ahearne

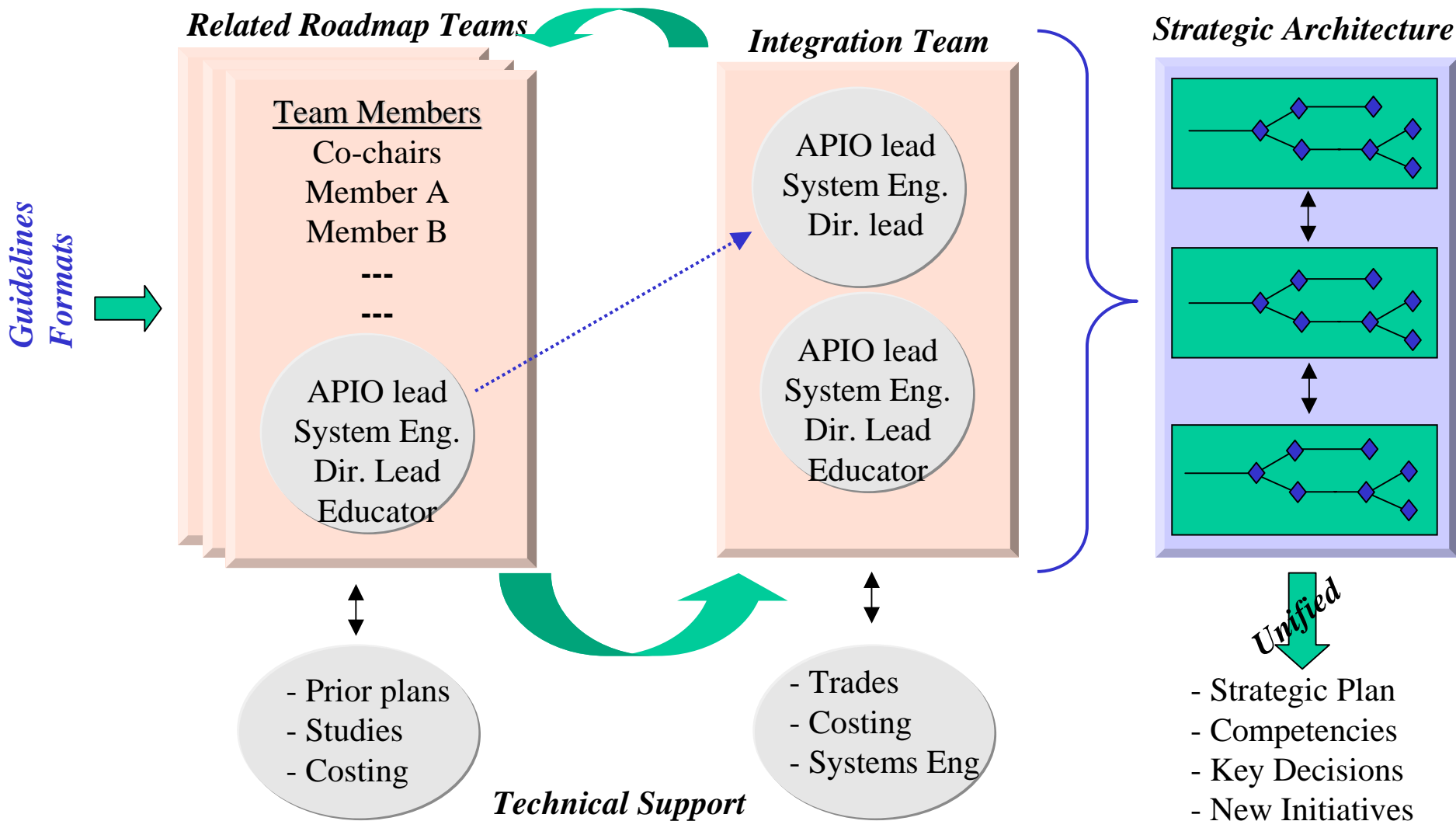


Advanced Planning: Capability Roadmap Teams

Capability	NASA Chair	External Chair	Coordinators	
			Directorate	APIO
1) High-energy power and propulsion	J. Nainiger (GRC)	Tom Hughes (Penn State University)	Overall – B. Park Technical – R. Taylor	P. Bankston (JPL)
2) In-space transportation	P. McConnaughey (MSFC)	Col. Joe Boyles (US Air Force SMC)	Overall – B. Park Technical – G. Lyles	T. Inman (MSFC)
3) Advanced telescopes and observatories	L. Feinberg (GSFC)	Howard MacEwan (NRO)	H. Thronson	D. Coulter (JPL)
4) Communication and Navigation	R. Spearing (HQ)		T. Cremins M. Gates	S. Mecherle (Innocept)
5) Robotic access to planetary surfaces	M. Adler (JPL)	Robert Braun (Georgia Tech)	H. Thronson	C. Ruoff (JPL)
6) Human planetary landing systems	R. Manning (JPL)	<i>Harrison Schmitt</i>	Overall – B. Park Technical – J. Trosper	R. Mueller (KSC)
7) Human health and support systems	D. Grounds (JSC)	Al Boehm (Retired, Hamilton-Sunstrand)	Overall – B. Park Technical – G. Trinh	J. Aikins (ARC)
8) Human exploration systems and mobility	C. Culbert (JSC)		Overall – B. Park Technical – J. Mankins	T. Inman (MSFC)
9) Autonomous systems and robotics	S. Zornetzer (ARC)	Doug Gage (DARPA retired)	H. Thronson	J. Aikins (ARC)
10) Transformational spaceport/range	K. Poniatowski (HQ)		T. Cremins, M. Gates	D. Skelly (KSC)
11) Scientific instruments/sensors	R. Barney (GSFC)	Maria Zuber (MIT)	H. Thronson	P. Bankston (JPL)
12) <i>In situ</i> resource utilization	J. Sanders (JSC)	Mike Duke (Colorado School of Mines)	Overall – B. Park Technical – J. Mankins	R. Mueller (KSC)
13) Advanced modeling, simulation, analysis	E. Antonsson (JPL)	<i>Dr. Warren Washington (NCAR)</i>	H. Thronson	J. Aikins (ARC)
14) Systems engineering cost/risk analysis	S. Cavanaugh (LaRC)	Dr. Alan Wilhite/ Georgia Institute of Technology	Overall – B. Park Technical – V. Hwa	V. Regenie (DFRC)
15) Nanotechnology	M. Hirschbein (HQ) Minoo Dastoor (JPL)	Dimitris Lagoudas (Texas A&M)	H. Thronson	J. Crooke (GSFC)



Advanced Planning: Integration Team





Systems Integration: Program

- **Transforming Program Management Committee governance structure**
 - **Agency Program Management Committee**
 - Strategic Roadmaps and associated Agency-level requirements, milestones and integrated critical path(s)
 - Non-Advocate Reviews/Authority to Proceed Recommendations
 - Selected Earned Value Trends and Triggers
 - **Directorate Program Management Committees**
 - Directorate Level Requirements
 - Capabilities Roadmaps and associated Directorate-level milestones and critical paths
 - Programs
 - Scope, Schedule, Cost, Risk, Earned Value Trends
 - **Center Program Management Committees**
 - Projects
 - Scope, Schedule, Cost, Risk, Earned Value Management
- **Advanced Planning & Integration Lead: Mike Tanner**



Systems Integration: Budget

- **Zero-Based Review of Corporate G&A**
 - Zero-base review underway
 - Mission Support Office Corporate G&A Briefings are being held with Mary Kicza and Jim Jennings
 - Will be completed in the November 2004 time frame.
 - Options will be reviewed by the Institutional Committee, with recommendations made to the NASA Operations Council.
- **Strategic Institutional Investment Process**
 - Process/Criteria being drafted, with plans to implement process annually
- **Advanced Planning & Integration Lead: Michael Abreu**



Systems Integration: Institutional

- **NASA Core Competencies Dialogue**
 - **Objective:**
 - Agreed upon set of core competencies, by Center
 - Agreed upon approaches or mechanisms for supporting these competencies in a full cost environment
 - **Agency agreement on the above this fall**
 - Outcomes reviewed by NASA Operations Council, with recommendations made to Strategic Planning Council
 - Validate/refine Agency position consistent with roadmap results
- **Integrated Institutional Workload Analysis**
 - Inventory and analyze functional/mission support initiatives & requirements to better manage & communicate
 - Decision forum for recommendations anticipated to be the NASA Operations Council.
- **Advanced Planning & Integration Lead: Jerry Simpson**



Systems Integration: Strategic Plan

- **Updated Agency Strategic Plan – February 05**
 - Updated Mission Strategies – proposed: draft June 05, final November 05
 - Updated Center Implementation Plans – proposed: draft July 05, final November 05
- Area Lead: **David Schurr**



Strategic Plan Schedule

Tasks	Oct					Nov			Dec			Jan		Feb		Mar
	1-Oct	4-Oct	8-Oct	11-Oct	27-Oct	1-Nov	15-Nov	30-Nov	3-Dec	16-Dec		11-Jan	24-Jan	1-Feb	25-Feb	30-Mar
First draft of Strategic Plan delivered from the Integrated Planning Team	▼															
Prepare Draft for Circulation		↔														
Draft circulated to Missions, OICs, Centers, OMB and SPC for comments and additions				▼												
Comments and additions due					▼											
IPT disposition comments and additions						▼										
Send 2nd Draft to Missions, OICs, Centers, and SPC for comments Send to OMB for review							▼									
Comments due								▼								
IPT dispositions comments									▼							
Send 3rd (near-final) Draft Text to SPC for concurrence; Send to OMB for concurrence										▼						
Final concurrences due back to IPT; <i>Final cut-off date for changes to text and graphics</i>												▼				
Send final Draft (in Word) to Copier													▼			
Deliver Final Draft, with Budget, to OMB, Congress, President														▼		
Convert Final Draft to glossy Printed Strategic Plan Version												↔				
Deliver files for Printed Strategic Plan to P&D for final production and printing															▼	
Distribute Printed Strategic Plan																▼

(Strategic Plan for release March 20, 2005)

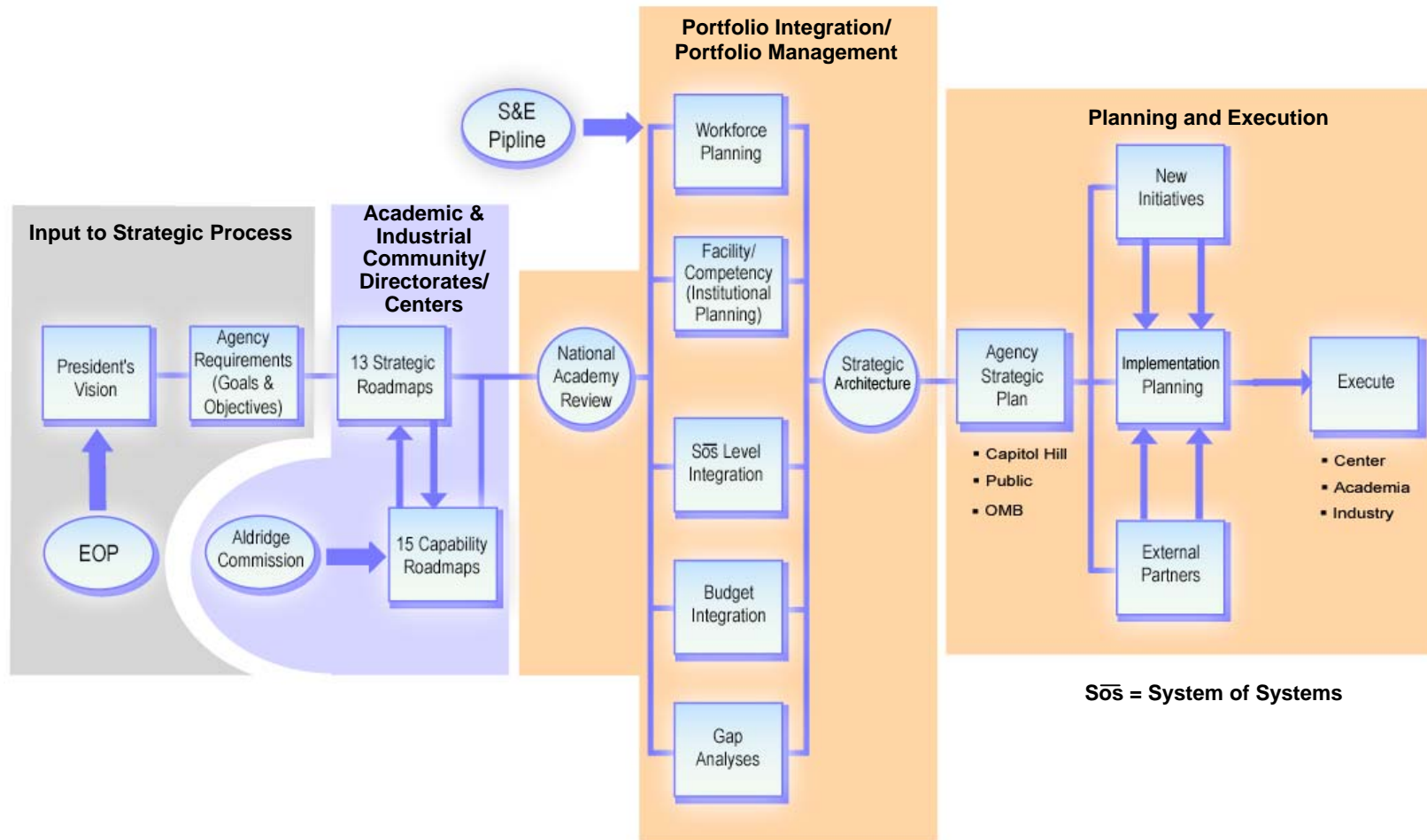


Strategic Planning Framework





Strategic Planning Framework



Directorates

Directorates

APIO



NASA Transformation Dialogues

Transforming our Agency's organizational and safety culture to "live our values."

- **Continuous internal transformation dialogue throughout the Agency to invigorate vertical and horizontal communication**
- **NASA Transformation Dialogues (to date)**
 - Administrator's Update (July 9)
 - Open Discussion of the Clarity Team Report (July 27)
 - The Role of Competition (August 20)
 - Alternate Organizational Models (August 23)
 - Other Transformation Issues (August 26)
 - Competency Management: Ensuring Technical Excellence and In-House Capabilities (Sept. 2)
 - Sustaining the Vision Long Term (Sept. 10)
 - Workforce Re-shaping Based on Mission Requirements—A More In-depth Discussion (Sept. 20)
- **Next Steps: Leader-Led Workshops**



Summary

- **Transformation well underway**
 - **Significant progress in response to recent Reports**
 - **Headquarters Transformation**
 - **Mission Directorates, Mission Support Offices in place**
 - **New councils established and operating**
 - **Strategic Planning Council**
 - **NASA Operations Council**
 - **Director of Advanced Planning and Associate Deputy Administrator for Systems Integration are in place, serving as catalysts for change**
 - **Increased emphasis on Agency internal communications throughout the transformation process**